REMARKS

Claims 17-33 and 36-38 are pending in the application. All of these claims have been rejected. Applicant has cancelled claims 30-31 and amended claim 32. Applicant acknowledges with appreciation the entry of Applicant's submission on August 21, 2006 and withdrawal of the finality of the rejection pursuant to the request for continued examination.

In response to Applicant's arguments submitted in the October 19, 2006 Response to the previous Office Action, the Examiner asserts that the "declaration does not establish that the backlog of applications were taken up diligently and in chronological order, therefore there is insufficient evidence to establish reasonable diligence." In the Examiner's Office Action mailed April 17, 2006 the Examiner asserted that "[t]he declaration indicates that from a date prior to December 17, 1999 to June 30, 2000, the invention record remained in the BOC's IP department and does not indicate that any work was performed in reducing the invention to either a constructive reduction to practice or an actual reduction to practice." Applicant responded with a supplemental declaration filed July 17, 2004 showing that the attorney with reasonable diligence worked through a backlog of cases and work-related matters until June 30, 2000. Numerous courts including the Federal Circuit and its predecessor court, the Court of Customs and Patent Appeals, have recognized on several occasions that "it may not be possible for a patent attorney to begin working on an application at the moment the inventor makes the disclosure because the attorney may already have a backlog of other cases demanding his attention. Thus, the courts have recognized that *reasonable* diligence is all that is required of the attorney." *Bey v. Kollonitsch*, 806 F.2d 1024, 1028 (Fed. Cir. 1986) (emphasis in original); *See Rines v. Morgan*, 250 F.2d 365, 369 (Fed. Cir. 1957); *Griffith v. Kanamaru*, 816 F.2d 624, 626-27 (Fed. Cir. 1987); *K&K Jumpstart/Chargers, Inc. v. Schumacher Elec. Corp.*, 82 F.Supp.2d 1012, 1021, n. 8 (Dist. Mo. 2000); *Quad-Six, Inc. v. Burness C. Hall*, 5 U.S.P.Q.2d (BNA) 1700 (1987); M.P.E.P. § 2138.06 (2005). Applicant respectfully submits that the standard cannot mean that the application was worked on every second of every day between December 17, 1999 and June 30, 2000. Accordingly, Applicant respectfully submits that the Declaration and Supplemental Declaration establish reasonable diligence of the attorney during the period between December 17, 1999 and June 30, 2000.

The Examiner further asserts that, contrary to Applicant's arguments, U.S. Patent No. 6,429,139 B1 ("Ryan et al.") (Col. 2-3 Ln 42-17) disclose "all limitations as broadly recited in [independent] claim 17". In addition, the Examiner asserts that Ryan et al. (Col. 11 Ln 29-45 and Figure 9B) disclose "the limitations of claims 19, 24, 26 and 36-38 at least as broadly described by the claims" and Ryan et al. (Figures 12-13 and Col. 14 *et seq.*) disclose the limitations of claim 30. The Examiner further considers unpersuasive Applicant's arguments that claims 20-23, 27-29 and 31-32 are not rendered obvious by Ryan et al. in view of U.S. Patent No. 4,226,208 ("Nishida et al.") for the same reasons set forth above. In addition, contrary to Applicant's assertions, the Examiner argues that Ryan et al. in view of Figure 5 of Nishida et al. teaches limitations of claim 33. For the following reasons, Applicant respectfully disagrees with the Examiner's assertions.

The Examiner rejected claims 17-19, 24-26, 30 and 36-38 under 35 U.S.C. § 102(e) as being anticipated by Ryan et al. The Examiner asserts that Ryan et al. (Col. 2-3 Ln 42-17 and Col. 11 Ln 29-45) disclose all of the limitations claimed in claims 17-19, 24-26, 30 and 36-38. Applicant respectfully traverses the rejection. Independent claim 17 claims "forming the load lock chamber." Ryan et al, most particularly those portions cited by the Examiner (i.e. Col. 2-3 Ln 42-17 and Col. 11 Ln 29-45) to support the argument that claim 17 is anticipated by Ryan et al., simply fails to disclose or even suggest "*forming* the load lock chamber." Emphasis added. Ryan et al. disclose that the "system includes a load lock chamber [206]." Col. 2 Ln 46-47. Fig. 3 depicts the load lock chamber 206 as having a load lock cover 250, a T-shaped recess 252 and a wafer side access port 262. *See* Col. 8-9 Ln 38-9. Indeed, the load-lock chamber is already formed as part of the system – it is a static compartment in the system. Ryan et al. fail to disclose or even suggest a method of forming the load lock chamber – the chamber simply exists at all times as part of the system. Accordingly, Ryan et al. fail to disclose "forming the load lock chamber" as claimed in independent claim 17.

Independent claim 17 further claims "forming the load lock chamber around an opening through a wall of an enclosure by an article supporting surface that is sealed to the inside of the wall." Emphasis added. Ryan et al. disclose that "[a] portion of the load lock chamber is sealed or otherwise isolated from the transfer chamber and the process chamber" (Col. 2 Ln 48-50), and simply do not disclose forming a load lock chamber where an article supporting surface is sealed to the inside of a wall. The section of Ryan et al. cited by the Examiner regarding the ring valve

(Col. 2-3 Ln 65-17) appears irrelevant. Ryan et al. teach that the ring valve "resides within or is otherwise associated with the process chamber and is operable to move between an open and closed position...to selectively seal the process chamber from the remainder of the...system." Col. 2-3 Ln 66-3; *See* Figs 3-5. Accordingly, the ring valve is not an article supporting surface as claimed in independent claim 17. Moreover, being located in the process chamber, it appears impossible for the ring valve to form a load lock chamber as claimed in independent claim 17. Moreover, Ryan et al. disclose that "the load lock chamber 206...[has] a load lock cover 250...which [is]...lowered within a shallow T-shaped recess 252 and sealingly engages and thereby *isolates* a portion of the load lock chamber 250...from the transfer chamber 205." Col. 8, Ln 38-45; (emphasis added). Ryan et al. further disclose that "the load lock cover 250 is lifted or otherwise moved out of the recess 252...to bring the recess portion 252 of the load lock chamber 206 into fluid communication with the transfer chamber 204." Col. 8 Ln 45-50. The load lock cover 250 is not an article supporting surface as claimed in claim 17 and thus Ryan et al. fail to disclose a method of forming a load lock chamber by an article supporting surface that is sealed to the inside of a wall as claimed in claim 17. In addition, Ryan et al. fail to disclose a method of forming a load lock chamber *around* an opening *through* a wall of an enclosure. The Examiner has cited nothing in Ryan et al. that discloses this limitation.

In addition, independent claim 17 claims "forming the load lock chamber...by an article supporting surface...and a cover that is sealed to the *outside* of the wall around the opening." As mentioned above, Ryan et al. disclose that the load lock cover 250 is lowered within the T-shaped recess 252 of the load lock chamber to isolate a portion of the load lock chamber 250 from the transfer chamber 205. Col. 8 Ln 38-45; *See* Fig. 3; emphasis added. As shown in Fig. 3, the load lock cover 250 is positioned on the *inside* of the load lock chamber. Thus, not only do Ryan et al. fail to disclose forming the load lock chamber by an article supporting surface, but Ryan et al. also fail to disclose forming the load lock chamber by an article supporting surface and a cover that is sealed to the *outside* of the wall as claimed in claim 17.

Independent claim 17 further claims "removing the cover from its seal with the wall while the article supporting surface remains sealed to the wall." As mentioned above, Ryan et al. fail to disclose an article supporting surface sealed to the wall and much less, that an article supporting surface *remains* sealed to the wall while removing the cover from its seal with the wall as claimed in independent claim 17. Ryan et al. disclose a load lock chamber having "a

plurality of pins 256...to position the wafer W vertically into a wafer transfer plane 260;" thus, the pins support the wafer. Col. 8, Ln 56-59. Ryan et al. simply fail to disclose "removing the cover from its seal with the wall while the article supporting surface remains sealed to the wall" as claimed in independent claim 17.

Independent claim 17 further claims "providing an opening between the load lock chamber and the process chamber by moving the article supporting surface away from the wall while the cover is sealed with the outside of the wall around the opening." Ryan et al. disclose that "the load lock cover 250 is lifted or otherwise moved out of the recess 252...to bring the recess portion 252 of the load lock chamber 206 into fluid communication with the transfer chamber 204." Col. 8 Ln 45-50. The load lock cover 250 is thus moved *within* the load lock chamber in order to permit fluid communication between the load lock chamber and the process chamber. Accordingly, Ryan et al. fail to disclose "providing an opening between the load lock chamber and the process chamber by moving the article supporting surface away from the wall while the cover is sealed with the outside of the wall around the opening" as claimed in independent claim 17. Accordingly, in view of the foregoing remarks, Applicant respectfully submits that independent claim 17 is not anticipated by Ryan et al. and respectfully requests withdrawal of the rejection to this claim.

Dependent claims 18-19 and 24-25 depend either directly or indirectly from independent claim 17and thus are similarly not anticipated by Ryan et al. for at least the reasons set forth above. In addition, dependent claim 19 claims "wherein swapping of the...articles includes moving said articles toward each other, then rotating the articles...and thereafter moving said articles away from each other." Ryan et al. disclose a transfer arm 454 within "a system 450 employing a generally elliptical...housing 452...as illustrated in Figs. 9a-9d." Col. 11, Ln 15-20; emphasis added. The transfer "arm 454 contains end effectors 456...that rotate about an end axis 458 in a controlled manner (i.e., *as a function of the rotational position of the arm 454 about the center axis 412*)." Col. 11, Ln 22-24, 29-34; Figs 9a-9d; (emphasis added). Thus, as shown in Figs 9a-9d, when the transfer arm 454 begins to rotate from its position in Fig. 9a, the end effectors 456 gradually rotate the wafers W through the positions shown in Figs 9b-9d so that "the end effectors 456 (and therefore the wafers W) travel between the chambers 402 and 406 in a generally elliptical transfer path." Col. 11, Ln 44-46; Figs 9a-9d. Ryan et al. fail to disclose

or even suggest "moving said articles toward each other, *then rotating* the articles...and thereafter moving said articles away from each other" as claimed in dependent claim 19.

Ryan et al. also fail to disclose each and every element of dependent claim 24. Dependent claim 24 claims "moving the article supporting surface with articles thereon laterally between the load lock chamber and the processing chamber." Ryan et al. disclose rotational movement of the transfer arm 454 and the end effectors 456 and fail to disclose or even suggest "moving the article supporting surface...*laterally* between" the chambers as claimed in claim 24. (emphasis added). Indeed, it appears that the construction of the transfer arm apparatus 454 of Ryan et al. (*see* Figs 9a-9d) would be incapable of laterally moving the wafers W between the chambers as claimed in claim 24. Accordingly, for these further reasons Applicant respectfully submits that dependent claims 19 and 24 are not anticipated by Ryan et al. and requests withdrawal of the rejections to dependent claims 18-19 and 24-25.

Independent claim 26 is also not anticipated by Ryan et al. Independent claim 26 claims "moving...one article in the processing chamber and...one article in the load lock chamber towards each other, thereafter...rotating the articles..., and thereafter, moving the articles away from each other." Nowhere do Ryan et al. disclose or even suggest such a method as claimed in claim 26. As discussed above with respect to dependent claim 19, Ryan et al. disclose a transfer arm 454 within "a system 450 employing a generally elliptical...housing 452...as illustrated in Figs. 9a-9d." Col. 11, Ln 15-20. The transfer "arm 454 contains end effectors 456...that rotate about an end axis 458 in a controlled manner (i.e., *as a function of the rotational position of the arm 454 about the center axis 412*)." Col. 11, Ln 22-24, 29-34; Figs 9a-9d; (emphasis added). Thus, as shown in Figs 9a-9d, when the transfer arm 454 begins to rotate from its position in Fig. 9a, the end effectors 456 gradually rotate the wafers W through the positions shown in Figs 9b-9d so that "the end effectors 456 (and therefore the wafers W) travel between the chambers 402 and 406 in a generally elliptical transfer path." Col. 11, Ln 44-46; Figs 9a-9d. Ryan et al. fail to disclose or even suggest moving an article in the process chamber and an article in the load lock chamber "towards each other, thereafter...rotating the articles..., and thereafter, moving the articles away from each other" as claimed in independent claim 26. Accordingly, Applicant respectfully submits that independent claim 26 is not anticipated by Ryan et al. and requests withdrawal of the rejection to claim 26.

The Examiner rejected independent claim 30 as being anticipated by Ryan et al. Applicants have cancelled claim 30, thus, obviating the rejection.

Independent claim 36 is also not anticipated by Ryan et al. Independent claim 36 claims "connecting one end of a transfer arm to at least one article in the processing chamber and another end of the transfer arm to at least one article in the load lock chamber." In contrast, Ryan et al. disclose "a plurality of pins 256 operated by a pin assembly 258 to position the wafer W vertically into a wafer transfer plane." Col. 8, Ln 57-59. "The transfer arm...includes an elongate transfer member...having generally U-shaped end effectors 418 at each...end." Col. 10, Ln 31-33. It appears that the wafers simply rest on the U-shaped end effectors and there is simply no article "connected" to the transfer arm as claimed in claim 36. Accordingly, Ryan et al. fails to anticipate independent claim 36 and Applicant respectfully requests withdrawal of the rejection.

Ryan et al. also fail to disclose each and every element claimed in independent claim 37. Independent claim 37 claims "moving articles from...the load lock...or...processing chamber to a separate exchange location within the vacuum chamber, thereafter moving articles from the other of the load lock...or the processing chamber to said one of the load lock...or the processing chamber, and thereafter moving articles from the exchange location to said other of the load lock...or the processing chamber." Ryan et al. disclose "a neutral position...wherein the transfer arm 412 resides within the transfer chamber 404 entirely...[and] the internal access ports for the load lock chamber 406 and the process chamber 402 typically are closed." Col. 10, Ln 52-62. Ryan et al. fail to disclose or even suggest "moving articles...to a separate exchange location *within the vacuum chamber*" as claimed in claim 37. (emphasis added). In addition, the neutral position of Ryan et al. is not an *exchange* location as claimed in claim 37. The neutral position simply permits the transfer arm to reside in a neutral position sealed from both the process chamber and the load lock chamber. Accordingly, independent claim 37 is not anticipated by Ryan et al. and Applicant respectfully requests withdrawal of the rejection to claim 37.

Independent claim 38 claims "providing a carriage that is horizontally movable between the vacuum processing and load lock chambers..., positioning said...article on the carriage..., and thereafter moving the carriage with said...article." In contrast, Ryan et al. disclose a "transfer arm" (*See* elements 414 and 454 in Figs. 8a-9d) and fail to disclose or even suggest a "carriage" as claimed in independent claim 38. Indeed, Ryan et al. disclose a transfer arm 414,

454 that rotates about an axis 412 and fail to disclose horizontal movement of the transfer arm and certainly fail to disclose "providing a carriage that is horizontally movable" as claimed in independent 38. Accordingly, claim 38 is not anticipated by Ryan et al. and Applicant respectfully requests withdrawal of the rejection.

The Examiner rejected claims 20-23, 27-29 and 31-33 under 35 U.S.C. § 103(a) as being obvious over Ryan et al. in view of Nishida et al. The Examiner concedes that Ryan et al. "is silent to using a carrier dome." However, the Examiner has cited Nishida et al. as teaching that "a carrier dome allows for coating multiple wafers simultaneously." The Examiner asserted that "it would have been obvious...to a person having ordinary skill in the art to use a carrier dome in the process taught by Ryan." Applicant respectfully traverses the rejections. Notably, dependent claims 20-23 depend indirectly from independent claim 17 (discussed above). Thus, Applicant respectfully submits that even if Ryan et.al. were combined with Nishida et al., the combination would not achieve the invention as claimed in dependent claims 20-23 for at least the reasons set forth above with respect to independent claim 17. In addition, dependent claims 27-29 depend from independent claim 26 (discussed above). Thus, even if Ryan et al. were combined with Nishida et al., the combination would not achieve the invention as claimed in dependent claims 27-29 for at least the reasons set forth above with respect to independent claim 26. Thus, even if Ryan et al. were combined with Nishida et al., the combination would not achieve the invention as claimed in dependent claims 31-32 for at least the reasons set forth above with respect to independent claim 30.

Moreover, dependent claim 31 has been cancelled thereby obviating the rejection of this claim. In addition, dependent claim 32 has been amended to include the limitations of now cancelled independent claim 30 and is now in independent form.

As mentioned above, the Examiner also rejected independent claim 33 which claims "positioning the plurality of wafers across a plurality of wedge shaped pieces that are fit together on a first frame to form a dome surface, [and] moving one of the wedge shaped pieces at a time...until all of said...pieces are moved from the first frame to the second frame." Similarly, dependent claims 21-23, 28-29 and 32 all claim "wedge shaped pieces" of a dome. In contrast, Nishida et al. teach an apparatus having a "dome 50...situated to be transferred" wherein "the dome 50 is transferred from the lower section 64...to the upper section 28." Col. 3, Ln 25-26; Col. 4, Ln 26-29; Figs 2, 4-5. Nishida et al. also teaches a method including a "dome loading

step" wherein an operator places "a first dome 50 on the pedestal" and a "first layer depositing step" wherein "the dome 50 is rotated about its pole." Col. 6, Ln 6-25, 44-58. Thus, the teachings of Nishida et al. imply a dome comprised of a single piece for carrying wafers, but fail to teach a dome having "wedge shaped portions" or "pieces" as claimed in claims 21-23, 28-29 and 32. In addition, Nishida et al. simply fail to teach "positioning the plurality of wafers across a plurality of wedge shaped pieces that are fit together on a first frame to form a dome surface, [and] moving one of the wedge shaped pieces at a time...until all of said...pieces are moved from the first frame to the second frame." Accordingly, for these further reasons Applicant respectfully submits that even if Ryan et al. and Nishida et al. could be combined, the combination would not achieve the invention as claimed in independent claim 33 and dependent claims 21-23, 28-29 and 32.

In view of the foregoing remarks, Applicant respectfully submits that the Supplemental Declaration establishes diligence toward the constructive reduction to practice of the invention during the period of December 17, 1999 to June 30, 2000 and thus, the Supplemental Declaration together with the Declaration submitted on January 27, 2006 antedate Ryan et al. In the alternative, even if Ryan et al. is found to be prior art, independent claims 17, 26, 32-33, and 36-38 and dependent claims 18-23 and 27-29 are neither anticipated nor rendered obvious by Ryan et al. either alone or in combination with Nishida et al. Accordingly, Applicant respectfully requests withdrawal of the rejections and that the application be promptly passed to issue.

Respectfully submitted,

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